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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,944	08/13/2004	David Allen	trapping	4943
25764 7590 09/28/2007 FAEGRE & BENSON LLP PATENT DOCKETING 2200 WELLS FARGO CENTER 90 SOUTH SEVENTH STREET MINNEAPOLIS, MN 55402-3901			EXAMINER LEE, TOMMY D	
			ART UNIT 2625	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/710,944	Applicant(s) ALLEN, DAVID	
	Examiner Thomas D. Lee	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-29 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/13/04 and 9/21/07</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. Claims 8-28 are objected to because of the following informalities: There are two claims numbered "8". Claims 9-28 should be renumbered "10"- "29", respectively, and the second claim 8 should be renumbered "9". Afterward, the dependency of renumbered claims 19-29 should be changed to "18".
Appropriate correction is required.

Henceforth, claim numbers in this Office action will refer to the claims as renumbered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 6, 8, 10, 12 and 16-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 21 each recite the step of "wherein said step of evaluating the total luminance for each of the two colors involved in the trap relationship by assessing the RGB values of each composite color by the formula (.3 Red plus .59 Green plus .11 Blue) equals the total luminance." This recitation is unclear.

Is the applicant claiming calculation of the total luminance using the above formula? Please clarify.

Claims 8 and 22 each recite the step of "wherein said evaluation of the partial luminance of each of the ink values of each of said objects assesses the RGB value of a given ink by the formula (.3 Red plus .59 Green plus .11 Blue) equals the luminance of each ink." This recitation is unclear. Is the applicant claiming calculation of the luminance for each ink using the above formula? Please clarify.

Claims 10 and 23 each recite the step of "determining the partial gray of each of the composite colors by applying the formula of a given ink component in the composite color as (1 minus the partial luminance value of the ink) equals the partial gray." This recitation requires that the partial luminance value of the ink be determined prior to determining the partial gray of each of the composite colors. However, no such step appears in either of claims 10 and 23, or corresponding base claims 1 and 18, respectively.

Claims 12 and 24 each recite the step of "determining the principle gray threshold of the composite color by dividing the total gray of the composite color by combination of the total number of the inks of the composite color plus an offset value of less than .1." This recitation requires that the total gray of the composite colors be determined prior to determining the principle gray threshold of the composite color. However, no such step appears in either of claims 12 and 24, or corresponding base claims 1 and 18, respectively.

Claims 16 and 28 each recite the step of "spreading the foreground object relative to the background object when the luminance of the foreground object is greater than the background object unless the partial gray value of at least one ink component of either the foreground object or the background object is greater than the partial gray threshold in which case that object will knockout the other object for that ink component." This recitation requires that the partial gray value and the partial gray threshold be determined prior to spreading the foreground object. However, no such step appears in either of claims 16 and 28, or corresponding base claims 1 and 18 respectively.

Claims 17 and 29 each recite the step of "spreading the foreground object relative to the background object when the luminance of the foreground object is greater than the background object unless the partial gray value of at least one ink component of either the foreground object or the background object is greater than the rich black threshold and at least one ink component of that object is less than the rich black threshold in which case that object will overprint the other object for that ink component." This recitation requires that the partial gray value of at least one ink component of either the foreground object or the background object, as well as the rich black threshold, be determined prior to spreading the foreground object. However, no such step appears in either of claims 17 and 29, or corresponding claims 1 and 18, respectively.

Base claim 18 recites the step of "determine the direction of trapping for each of said trap zones based on said evaluations of said ink values of each object and upon thresholds for the partial gray and rich black." This recitation

requires that thresholds for the partial gray and rich black be determined prior to determining the direction of trapping for each of said trap zones. However, no such step appears in claim 18.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 9 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,313,570 (Dermer et al., hereinafter Dermer).

Regarding claims 1-3, 9 and 15, Dermer discloses a method for correcting misregistration of printing separations, said method comprising the steps of: paint each object (); create a trap zone relative to each adjacent object (continuous tone images scanned from original artwork or photographs (column 8, lines 3-5)); evaluate the ink values of each object, and determine the direction of trapping for each of said trap zones based on said evaluations of said ink values of each object (direction of trapping based on colors of object regions (Figs. 15a and 15b; column 17, lines 22-65)). Said method further includes the step of: storing each object in the order of which it is created (first object imaged, second object subsequently imaged and superimposed on first image (column 8, lines 53-58)). Said step of creating a trap zone includes defining the size of said trap zones (stroke width preset or user given, filled with color to form trap (column 17, line

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47 – column 18, line 27)). Said step of evaluating the ink values of each of the colors involved in the trapping relationship includes the step of: determining the partial gray of each of the composite colors (partial gray of red (30% red) represented by 0% cyan, 30% magenta, 30% yellow, 0% black, and partial gray of blue (65% blue) represented by 65% cyan, 65% magenta, 0% yellow, 0% black (column 19, line 67 – column 20, line 10)). Said step of determining the direction of trapping for each trap zone includes the step of: determining the direction of each of the inks of the foreground object relative to the background object based on the principle gray values of the objects (Figs. 15a and 15b; column 17, lines 22-65).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 5, 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dermer as applied to claim 1 above, and further in view of U.S. Patent 2001/0055130 (Geurts et al., hereinafter Geurts).

Regarding claims 4, 5, 7 and 13, Dermer does not disclose the step of evaluating the luminance, whether total or partial, of each of the ink values of each of said objects or composite colors involved in a trapping relationship; or determining the direction of each of the inks of the foreground object relative to

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the background object based on the luminance of the foreground object compared to the background object. Geurts discloses a trapping method, wherein the luminance values of adjacent regions are compared, and the color of a trap region is determined to be the color with the greater luminance value, (Fig. 9, paragraph 0096). Geurts states that it is sometimes desired to implement traps that gradually fade into another area rather than trap areas that have sudden edges (paragraph 0016), and this is achieved by basing the trap color on the luminance values of the adjacent regions. Therefore, it would have been obvious for one of ordinary skill in the art, at the time of applicant's invention, to modify the teaching of Dermer by applying the trapping method of Geurts.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dermer as applied to claim 1 above, and further in view of U.S. Patent 6,594,030 (Ahlstrom et al., hereinafter Ahlstrom).

Regarding claim 14, Dermer does not disclose the step of determining the direction of each of the inks of the foreground object relative to the background object based on the rich black values of the objects. Ahlstrom discloses automatic trapping of page objects, wherein keepaway trapping is performed by determining if a trap candidate segment is associated with a rich black colored first page object component; and if the trap candidate segment is associated with a rich black colored first page object component, rendering a corresponding thin white segment on all color plates except a black color plate (column 5, lines 10-20). Ahlstrom states that a keepaway trap prevents misregistration errors that may otherwise occur around edges of rich black page objects, by reducing the

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size of the non-black components of the page object, thereby allowing the bulk of the page object to be seen in the desired rich black color (column 7, lines 49-63). Thus, it would have been obvious for one of ordinary skill in the art, at the time of applicant's invention, to modify the teaching of Dermer by applying keepaway trapping, such as disclosed in Ahlstrom.

Allowable Subject Matter

10. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 18-29 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

12. Claims 10, 12, 16 and 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. Regarding claims 6, 8, 21 and 22, it is unclear as to what applicant is claiming in view of the indefinite language of the claims, as set forth above. Thus, patentability of these claims cannot be determined at this time.

14. The following is a statement of reasons for the indication of allowable subject matter: As best understood, no prior art has been found to disclose or suggest the step of "determine the direction of trapping for each of said trap zones based on said evaluations of said ink values of each object and upon thresholds for the partial gray and rich black," as recited in base claim 18; or "determining the partial gray of each of the composite colors by applying the

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formula of a given ink component in the composite color as (1 minus the partial luminance value of the ink) equals the partial gray," as recited in claims 10 and 23; or "determining the principle gray threshold of the composite color by dividing the total gray of the composite color by combination of the total number of the inks of the composite color plus an offset value of less than .1," as recited in claims 12 and 24; or "spreading the foreground object relative to the background object when the luminance of the foreground object is greater than the background object unless the partial gray value of at least one ink component of either the foreground object or the background object is greater than the partial gray threshold in which case that object will knockout the other object for that ink component," as recited in claims 16 and 28, or "spreading the foreground object relative to the background object when the luminance of the foreground object is greater than the background object unless the partial gray value of at least one ink component of either the foreground object or the background object is greater than the rich black threshold and at least one ink component of that object is less than the rich black threshold in which case that object will overprint the other object for that ink component," as recited in claims 17 and 29.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Lee whose telephone number is (571) 272-7436. The examiner can normally be reached on Monday-Friday, 7:30-5:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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